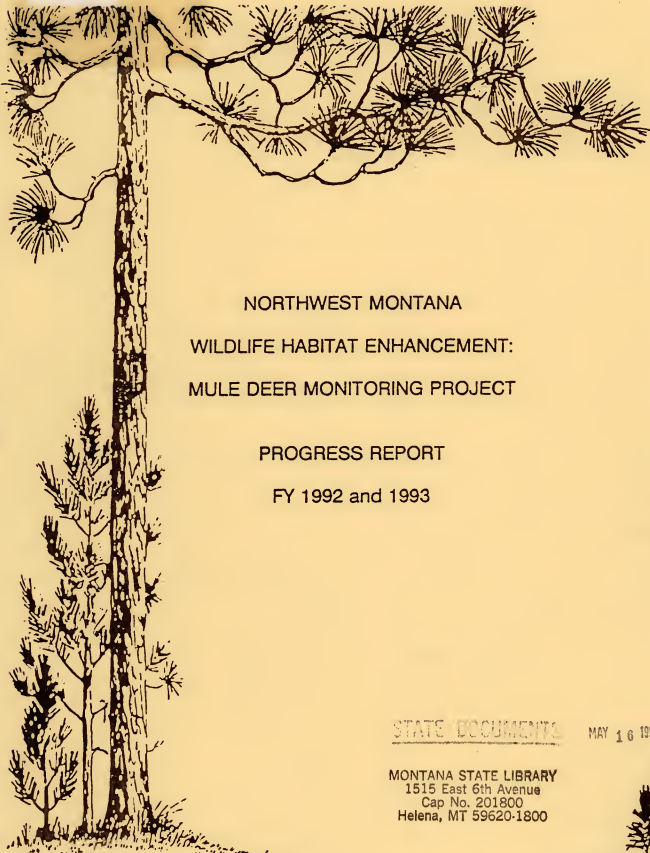


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NORTHWEST MONTANA
WILDLIFE HABITAT ENHANCEMENT:
MULE DEER MONITORING PROJECT

PROGRESS REPORT
FY 1992 and 1993

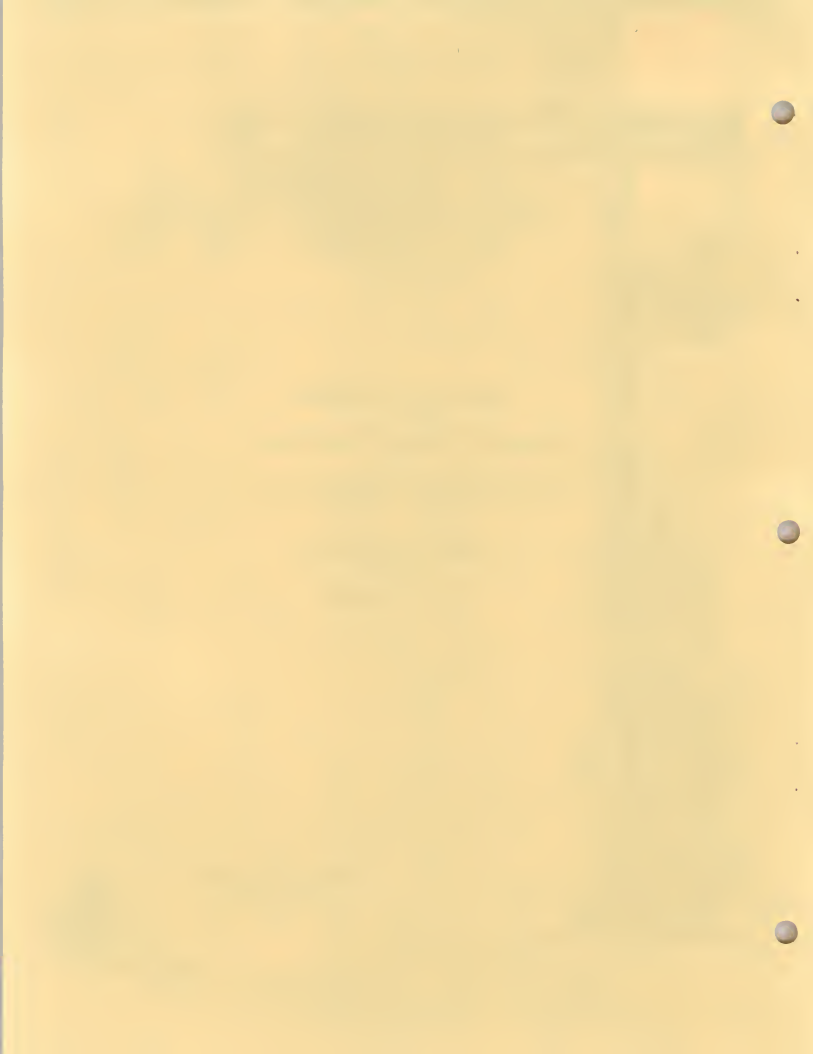
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ANNUAL PROGRESS REPORT

STATE: Montana

PROGRAM TITLE: Northwest Montana Wildlife

Habitat Enhancement

PROJECT NO: 51151 (FY92)

PROJECT TITLE: Mule Deer Monitoring - Libby

5141 (FY93)

PERIOD COVERED: July 1, 1991 - June 30, 1993

PREPARED BY: Harvey Nyberg

APPROVED BY: Jim Cross

Gerald W. Brown

John P. Weigand

Donald A. Childress

DATE: February 8, 1994

Since this is a progress report only, results presented herein are not necessarily final and may be subject to change. For this reason, the information contained in this report may not be published or used for other purposes without permission of the Director.



EXECUTIVE SUMMARY

This project was significantly reduced during fiscal year 92. The intensive vegetation and animal monitoring conducted under the Ural-Tweed Bighorn Sheep - Wildlife Mitigation Project was eliminated in October 1991 and replaced with the Mule Deer Monitoring Project. This downsizing was done to focus funds on direct habitat enhancement rather than monitoring. The primary objective of the MD Monitoring Project is to develop bounded estimates of the mule deer and bighorn sheep population sizes within a core project area, Tenmile Creek to Rocky Gorge. Changes in the deer population will be related by inference to changes in habitat based on the results of intensive monitoring at Hungry Horse.

FY92

During January to April, a concerted effort was made to capture and mark mule deer and bighorn sheep. The objective was to mark as many animals as possible to increase the precision of population estimates. Twenty (20) clover trapsites were established in the core area. We captured 203 animals, including 178 mule deer, 19 bighorn sheep and 6 white-tailed deer during 710 trap-nights of effort. Yellow ear streamers (2 x 8 inch) were placed on 84 mule deer and 13 bighorn sheep. In addition, radio transmitter collars were placed on 23 mule deer and 4 bighorn sheep. Nine animals died during trapping operations. Four injured themselves on the trap frame or netting as biologists approached the trap to mark them and predators killed five animals in traps (3 by mountain lion and 2 by coyote). Following predation events, traps in the immediate vicinity were closed for several days to prevent additional mortality. In 7 previous years of trapping, only one animal had been killed in the trap by a predator. Animal distribution and limited habitat use data were collected during monthly radio collar relocation flights. Movement patterns reflected those previously reported. A total-coverage helicopter survey of the core area was conducted on April 6 and 7, 1992. A total of 261 mule deer and 50 bighorn sheep were observed. The mule deer population was estimated at 488 animals based on sighting of 34 of 68 yellow ear streamered mule deer. Bighorn sheep population estimates of 124 and 237 were calculated based on sightings of 10 of 26 total marked animals thought to be in the population and 2 of 13 yellow ear streamered sheep, respectively.

FY93

A concerted effort was made to capture and mark as many mule deer and bighorn sheep as possible to increase the precision of mark-resighting population estimates. Twenty-one clover trapsites were established in the core area. During 615 trap-nights of effort we captured 324 mule deer and 20 bighorn sheep. Blue ear streamers (2 x 8 inch) were placed on 159 mule deer and 14 bighorn sheep. In addition, radio transmitter collars were placed on 17 mule deer and 4 bighorn sheep. Ten animals died during trapping operations. Five injured themselves on the trap frame or netting as biologists approached the trap to mark them and 5 were killed due to trampling by other animals in the trap at the same time. Animal distribution and limited habitat use data were collected during monthly radio collar relocation flights. Movement patterns reflected those previously reported. Fifty-nine bighorn sheep were seen and classified during a total-coverage survey of the herd range on January 6, 1993. The population size was estimated at 148 animals based on an average observability

of 42% during early winter. A total-coverage helicopter survey of the core area was conducted on April 20, 1992. A total of 164 mule deer and 9 bighorn sheep were observed. The mule deer population was estimated at 548 animals based on sighting of 45 of 152 blue ear streamered animals. The bighorn sheep population could not be estimated.

INTRODUCTION

Construction of Libby Dam and the subsequent filling of Lake Koocanusa flooded approximately 6,950 hectares (28,950 acres) of important winter and spring habitats for bighorn sheep and mule deer. These habitats provided nutritious forage during periods of adverse winter weather and during the important spring "green-up" period. With important "green-up" areas inundated by the reservoir, bighorn sheep and mule deer have been forced to use lower quality, dormant vegetation for a longer period. The importance of "green-up" areas for female bighorn sheep during late stages of pregnancy and lactation has been well documented (Stelfox 1976, Wishart 1978).

Ecological succession has also affected the quantity and quality of winter - spring forage available for mule deer and bighorn sheep. The initiation of effective fire suppression in the 1930's eliminated the historic role of fire in maintaining ecological disclimax communities. Open Ponderosa pine (*Pinus ponderosa*) forests were gradually replaced by closed-canopy Douglas-fir (*Pseudotsuga menziesii*) communities with a subsequent reduction in forage production.

During the development of the impact assessment (Yde and Olsen 1984), we hypothesized that the production and survival of young ungulates declined due to the predicted reduction in the quantity and quality of forage available from this combination of factors. We also predicted that production and survival of young could be increased by enhancing winter/spring habitats to increase the quantity and quality of available forage thereby restoring populations to pre-dam levels.

The primary objective of this project is to determine bounded estimates for the mule deer and bighorn sheep populations on selected portions of the winter range along Lake Koocanusa. Secondary objectives are to monitor changes in vegetation and to determine cause and effect relationships between observed changes in vegetation and big game populations.

This cooperative project between the Kootenai National Forest and Montana Department of Fish, Wildlife and Parks was initiated in September 1984. Project activities are funded by Bonneville Power Administration ratepayers under the Pacific Northwest Electric Power Planning and Conservation Act and the Wildlife Mitigation Agreement for Libby and Hungry Horse Dams.

DESCRIPTION OF THE PROJECT AREA

This project is being implemented primarily on the Tenmile Creek - Rocky Gorge (Tenmile) Winter Range (Figure 1). Prior to 1991, an effort was made to monitor big game populations and vegetation throughout the Ural Tweed bighorn sheep herd range. Three primary mule deer winter ranges were identified on the east side of Lake Koocanusa: Stone Hill, McGuire Creek and Tenmile Creek - Rocky Gorge. The Tenmile winter range is the largest winter use area and supports the largest mule deer population. Deer within the Tenmile winter range

display the full range of behavior described for deer along Lake Koocanusa (Stansbery 1991). Therefore, when the decision to downsize the project was made, we decided to focus on the Tenmile winter range (Yde 1991). Focusing population and vegetation monitoring in the Tenmile area will allow us to develop more precise population estimates for a lower expenditure.

The Tenmile winter range is located along the northwest flank of the Salish Mountains, approximately 48km north of Libby, Montana. The area includes portions of the Rexford Ranger District, Kootenai National Forest. Boundaries are Rocky Gorge to the north, Tenmile Creek on the south and Lake Koocanusa to the west. Elevations vary from 750m at the high water mark of Lake Koocanusa to 2,142m at the top of McGuire Mountain.

The Tenmile winter range is comprised of a series of northeast to southwest running drainages. At their lower end, these drainages have extensive southeast to west exposures which receive extensive winter sun. The project area can be divided into two main topographic components (Figure 2). From the lake level to approximately 1,525m, the area is characterized by steep, broken terrain, including cliff faces and talus slopes. The diversity of the terrain creates mesic microsites where vegetation remains green throughout summer. Above 1,525m, the terrain is less severe with more gentle slopes extending to ridgeline. These gentle slopes lack the topographic variety of the broken terrain and have fewer mesic microsites (Yde et al 1991).

A variety of timbered and non-timbered habitat types occur in the project area. These are fully described in previous reports (Yde et al 1991).

METHODS

POPULATION MONITORING

Objectives

1. Develop bounded estimates of the size of the mule deer population within the Tenmile - Rocky Gorge winter range.
2. Estimate the size of the Ural-Tweed bighorn sheep population.
3. Determine the sex and age composition of the mule deer and bighorn sheep populations.
4. Monitor the movements, distribution and habitat use of radio collared mule deer and bighorn sheep.

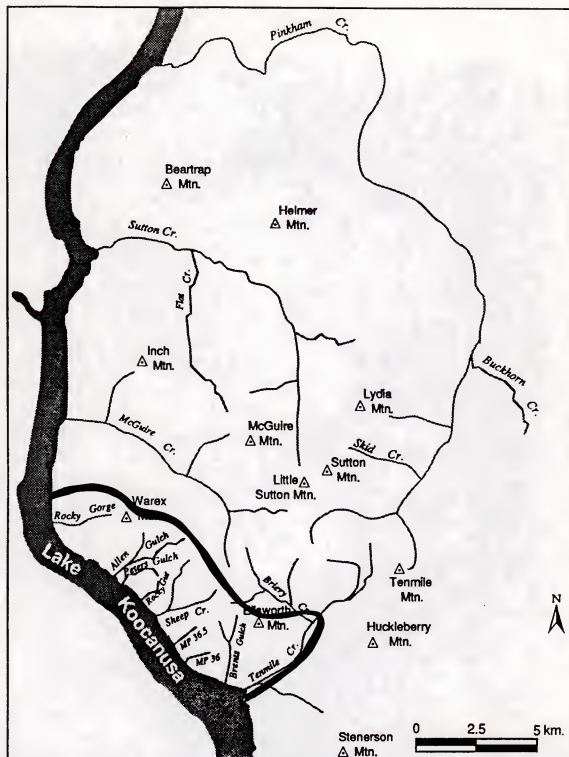


Figure 1. Map of the Tenmile Creek - Rocky Gorge Project Area.



Figure 2. Contour map of north Salish mountains study area illustrating 2 topographic zones.

Trapping and marking

Clover traps (Clover 1954) were placed at twenty or more sites on the winter range. Traps were set at locations frequented by both mule deer and bighorn sheep providing the opportunity to capture either species. Due to topography and lack of access roads, much of the project area is inaccessible to trapping. Therefore, we located most of the traps in areas adjacent to Highway 37, but somewhat concealed from public view.

Traps were baited with a mixture of high quality alfalfa hay, three-way grain and mineral salt and visited once daily in the morning. Occasionally two animals were captured in the same trap. In those cases, one of the animals, preferably a fawn or lamb, was released unmarked to prevent injury to either of the animals.

A corral trap, set up around a mineral lick under the Rock Gut Bridge, was repaired for use in early spring 1992, but not used due to the success of the clover trapping operation. This trap was dismantled after the 1992 trapping season and is no longer available for use.

Animals were marked with radio transmitter collars, yellow ear streamers or both. All captured deer received colored ear streamers to allow recognition during aerial population surveys. Although the streamers were not marked for individual recognition, they were held in place by numbered yellow button tags. Radio collars were reserved for adult female mule deer > 2.5 years old. Radio collars were covered with neckbands made of Richie material and marked with individually recognizable symbols.

We gathered sex, age and horn/antler growth data from each of the animals that were handled. Age of mule deer was determined by tooth replacement and wear (Robinette et al 1957). Bighorn sheep ages were assigned based on the number of horn annuli.

Recaptures were released without handling except to record ear tag numbers or neckband symbols and the location was noted for future use in describing use of the winter range.

Population surveys

We conducted early and late, winter helicopter surveys (Bell 47 or Hughes 500D). Data gathered during these surveys was used to estimate size and composition of the two populations. Flights were conducted during late afternoon and evening when the animals were more active and the sun was behind the observer. The mule deer population estimate is based on total coverage surveys of the Tenmile winter range (Figure 1) while bighorn sheep surveys covered the entire sheep range.

We calculated standard mark - resighting population estimates (Rice and Harder 1977) based on the results of the helicopter surveys, where:

$$N = [(M + 1)(C + 1)/(R + 1)] - 1$$

N = Population estimate.

M = Total marked animals within the population.

C = Total animals observed during the survey.

R = Number of marked animals observed during the survey.

Movements and distribution

Aerial, fixed wing, relocation surveys of the instrumented animals were conducted approximately monthly to determine seasonal distribution and habitat selection. In addition, locations of animals observed during other field activities, especially during winter trapping operations, were recorded to supplement the data base. We used locations of instrumented animals to determine animal home ranges, seasonal distribution patterns and habitat selection. The presence of all radio collared animals on the winter range was used to support the assumption of a closed population for mark resighting population estimates.

Each observation was recorded using Universal Transverse Mercator (UTM) coordinates. Data on elevation, aspect, slope and habitat components will be determined from GIS layers when they become available. Group size, composition and activity were recorded for visual observations.

VEGETATION MONITORING

Objectives:

1. Determine changes in plant composition, herbaceous production, shrub frequency and volume, and overstory canopy resulting from habitat enhancements;
2. Determine duration of beneficial results and potential retreatment schedule; and,

Ecodata Plots

Monitoring stations were established at three treatment and one common control sites within the core project area. Treatment and control sites were in close proximity and had similar habitat and topographic elements. Two transects were established in each treatment area and three transects were placed in the common control area.

The vegetation at each site was described using standard methods described in the USDA Forest Service Ecodata Handbook. Both ocular plots and short-nested microplots were conducted at each transect location. The ocular plot provides an indepth description of the environmental features, vegetation structure and composition and animal use and disturbance history at a 0.1 acre plot (Figure 3).

Short-nested microplots provide statistical data on vegetation and ground cover changes over time through use of rooted frequency of selected grasses, forbs and shrubs. Five parallel transects are placed perpendicular to a permanently marked 66 foot baseline. Ten 10 x 20 inch microplots are located at 5 foot intervals along the transect. Each microplot is placed on the right of the transect line with the lower left corner of the plot frame placed at the foot mark. We estimated percent ground cover of bare soil, vegetation etc, production of grasses and forbs, and canopy coverage of the dominant species in each plot frame. Plant nomenclature follows Hitchcock and Cronquist (1973).

Sampling was conducted during July. During this period, grasses had matured to at least the boot stage and the majority of forbs were flowering. Vegetation data collection was completed within as short of period of time as possible to reduce variability within the data.

Photo plots

To provide a long-term visual record of changes in vegetation structure, 3 to 5 photo plots (Jones, 1968) were established in each treatment/control area. Plots were permanently marked using metal posts. A 0.5 m x 2.0 m board, divided into 0.1 m squares, alternately painted black and white, was placed at one end of the plot and a photo taken with a 35 mm camera (50 mm lens, 64 ASA Kodachrome film) from 1.0 m above the opposite end of the plot. To provide uniformity between photos, the camera was focused on a spot 0.5 m above the bottom of the photo board. We experimented with the photo board held at various distances and reviewed analyses presented by Hays et al. (1981). We determined 15 m was the optimal distance between the ends of the photo plot. This distance allowed monitoring of several vegetative layers.

Photos qualitatively measure visual obstruction and demonstrate changes in vegetative structure over time. To obtain a quantitative measure of the vegetative cover, we modified methods described by Nudds (1977) and Hays et al. (1981). Slides of the photo plots were projected onto a grid dividing each of the black and white squares into quarters. This provided a total of 400 blocks which were used to determine percent of the cover board obscured by vegetation. The number of squares totally or partially obscured by vegetation were recorded. The percent cover was then calculated (number of squares with vegetation / 400). Changes in percent cover for a plot, or a series of plots, over time will provide another tool for assessing the shrub response (growth and relative density), as well as the establishment of conifers into treatment areas.

We plan to do photo plots every 2 - 3 years, but none were completed in FY92 or 93.

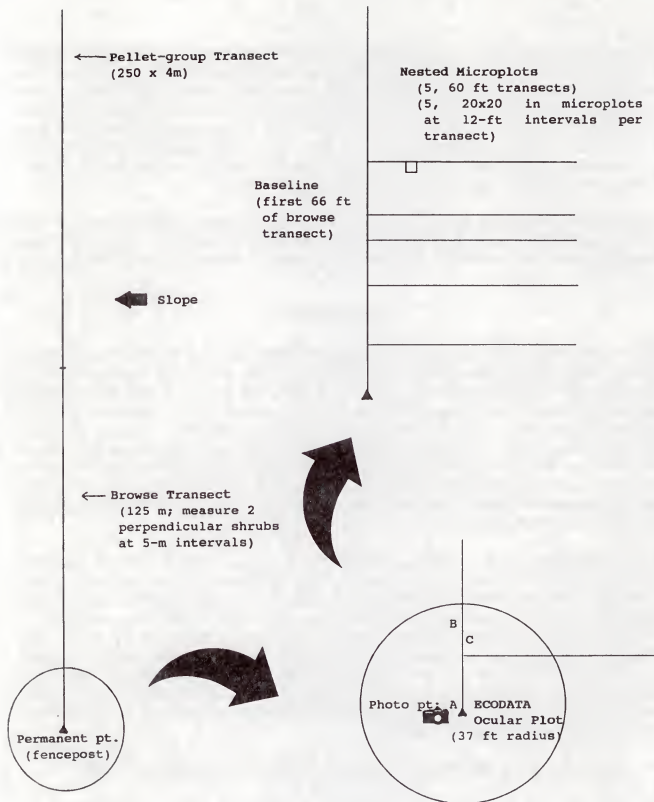


Figure 3. Schematic drawing of Ecodata Plot.

RESULTS AND DISCUSSION

POPULATION STUDIES

1992 TRAPPING SEASON

Clover traps were established at 20 sites within the Tenmile winter range (Yde and Lamoreux 1991). The corral trap at the Rock Gut Bridge was repaired, but was not used because of the success of the clover trapping effort. A total of 710 trap nights of effort was recorded. Traps were tripped a total of 242 times, but animals escaped without handling on 39 occasions. Escapes occurred when the animal was able to get under the door and out of the trap or when the animal created a hole in the netting and escaped. Of the 39 escapes, 25 were determined to be by mule deer, 1 by bighorn sheep, 9 by elk and 3 unknown. Therefore, 203 animals were captured, including 178 mule deer, 19 bighorn sheep and 6 white-tailed deer, for an overall capture rate of 29%.

The 178 mule deer captures included 73 new marked animals, 25 remarked animals, 1 released unmarked, 9 mortalities, and 70 recaptures which were released without handling (Table 1). The 19 bighorn sheep captures included 17 new marked animals and 2 recaptures (Table 1). White-tailed deer were released unmarked. A complete listing of mule deer and bighorn sheep marked in the project area is included in Appendix A.

Animals were marked with radio transmitter collars or yellow ear streamers or both. Yellow ear streamers (2 x 8 inch) were placed on 84 mule deer and 13 bighorn sheep. Radio transmitters were placed on 23 mule deer and 4 bighorn sheep. Transmitters were placed on adult female mule deer that had not been previously marked (12) or which had non-functional radio collars (11). After all new transmitters had been deployed, non-functional transmitters were removed from 3 mule deer. Four new transmitters were placed on adult bighorn sheep.

Mule deer have been trapped and marked with a variety of tag types since 1986. One of the goals of our trapping effort in FY92 was to replace this assortment of tags, except neckbands and functional radio collars, with a uniform marker. We captured 25 mule deer which had been marked in previous trapping seasons and replaced red roto tags (4), colored ear streamers (1) and non-functional radio collars (3) with yellow ear streamers. In addition, yellow ear streamers were added to 1 existing functional radio collar, 3 neckbanded animals and the 11 deer which had non-functional radio collars replaced.

Nine animals (4.4% of animals handled) died during trapping operations. Four animals injured themselves on the trap as biologists approached the trap to mark them.

Table 1. Summary of trapping effort and success, 1989 to 1993.

Trapping Season	Number of Traps	Number of Trapnights	Species	Number of Captures	New Marked Animals	Number of Remarkd Animals	Number Released Unmarked	Number of Mortalities	Number of Recaptures Released
1989	20	219	MD	95	51	3	28	5	8
			BHS	1	1	--	--	--	--
1990 *1	--	--	MD	--	3	--	--	--	--
			BHS	--	1	--	--	--	--
1991 *2	--	--	MD	--	--	--	--	--	--
			BHS	--	--	--	--	--	--
1992	20	710	MD	178	73	25	1	9	70
			BHS	19	17	2	--	--	--
1993	21	615	MD	344	118	41	9	10	146
			BHS	9	5	1	--	5	--

*1 Limited trapping effort. More detailed data were not available.

*2 No trapping during 1991.

Predators killed five mule deer in traps (3 by mountain lion and 2 by coyote). Following predation events, traps in the immediate vicinity were closed for several days to prevent additional predation. In 7 previous years of trapping, only one animal had been killed in the trap by a predator.

Observations of marked animals

In an effort to determine which of the formerly marked animals were still in the population, we recorded all observations of marked and unmarked animals. Five previously marked animals were observed (Table 2).

Table 2. Previously marked animals observed on the Tenmile winter range, FY92.

Species	MAID ¹	Marker Type	Color	Symbol
Mule Deer	66	Neckband	Blue/White	Open Triangles
Mule Deer	84	Neckband	Yellow/Black	Chevrons
Bighorn Sheep	5	Radio Collar ²	White/Black	Center Stripe
Bighorn Sheep	15	Radio Collar ²	Yellow	None
Bighorn Sheep	18	Radio Collar ²	Red	None

1. Marked animal identification number.

2. Non-functional radio collar.

1993 TRAPPING SEASON

The trapping season began January 11 and ended March 22, 1993. Clover traps were established at 21 sites within the Tenmile Creek - Rocky Gorge Winter Range. A total of 615 trap nights of effort were recorded (Schmidt and Johnson 1993). Traps were tripped 362 times resulting in the capture of 344 animals for a trapping efficiency of 55%. Animals escaped without handling on 4 occasions. Escapes occurred when the animal was able to get under the door and out of the trap or when the animal created a hole in the netting and escaped. The 344 animals captured included 324 mule deer and 20 bighorn sheep.

The 324 mule deer captures included 118 new marked animals, 41 remarked animals, 5 released unmarked, 10 mortalities, and 146 recaptures released without handling (Table 1). Blue ear streamers were placed on all 159 marked or remarked deer. In an effort to increase the known sample size available for calculating population estimates, we removed inactive radio collars and ear streamers whenever possible. The 41 remarked mule deer included: yellow ear streamers (25); red rototags (8); yellow ear streamers with red rototags (2); neckbands (4); and non-functioning radios (2).

The 20 bighorn sheep captures included 9 new marked animals, 5 remarked and 5 released without handling (Table 1). One sheep was released unmarked.

No white-tailed deer were captured during the 93 trapping season. A complete listing of mule deer and bighorn sheep marked in the project area is included in Appendix A.

Animals were marked with radio transmitter collars or blue ear streamers or both. Blue ear streamers (2 x 8 inch) were placed on 159 mule deer and 14 bighorn sheep. Radio transmitters were placed on 17 mule deer and 4 bighorn sheep. Transmitters were placed on adult female mule deer that had not been previously marked with transmitter collars (13), which had non-functional radio collars (2), or which had neckbands. Radio transmitters were placed on (3) new and (1) previously radio collared adult bighorn sheep.

Ten mule deer (2.9% of animals handled) died during trapping operations. Five animals died after injuring themselves on the trap frame or netting as biologists approached the trap to mark them. In an effort to reduce the potential for injury, selected traps were modified. The back of the trap opposite the door was made more flexible by using either nylon bungi cord or steel rings to allow more give in the netting. These adjustments were made too late in the trapping season to allow an adequate evaluation. During the FY94 trapping season, we will evaluate the effectiveness of the various designs to reduce trap mortality.

Observations of marked animals

In an effort to determine which of the formerly marked animals were still in the population, we recorded all observations of marked and unmarked animals. Four previously marked animals were observed (Table 3).

Table 3. Previously marked animals observed on the Tenmile winter range, FY93.

Species	MAID ¹	Marker Type	Color	Symbol
Bighorn Sheep	003	Radio ²	White	Solid
Bighorn Sheep	023	Radio Collar ²	White/Black	X's
Bighorn Sheep	027	Radio Collar ²	Yellow/Black	Arrows
Bighorn Sheep	029	Neckband	Red/White	Slashes

1. Marked animal identification number.

2. Non-functional radio collar.

Population Surveys

MULE DEER FY92

A total coverage helicopter survey of the winter range was conducted on April 6, 1992. A total of 261 mule deer, including 36 of 68 ear streamer marked deer known to be in the area, was observed. Fifteen of a potential 72 mule deer with individually recognizable neckbands were seen during this survey (Table 4). We calculated population estimates using deer marked

with ear streamers, neckbands or radio collars and streamers and neckbands. These yielded estimates of 488, 1,194 and 739, respectively for yellow ear streamered, neckbanded deer and all marked mule deer, respectively (Table 5.)

FY93

A total coverage survey of the Tenmile - Rocky Gorge Winter Range was flown on 20 April 1993. A total of 164 mule deer were observed including 45 with blue ear streamers, 6 with yellow ear streamers and 13 with active radio collars and 4 with inactive radios or neckbands. Population estimates were calculated for animals with blue ear streamers or active radio collars. Using blue ear streamers, we calculated a population estimate of 548 mule deer based on observation of 45 of 152 animals thought to be in the population ($M=152$, $C=164$, $R=45$). Using active radio collars only, we calculated an estimate of 364 mule deer ($M=30$, $C=164$, $R=13$).

Mule deer population estimates for the Tenmile winter range have been calculated since 1990 (Table 5) and have varied widely. Prior to FY92, population size was calculated using the assumption that all marked animals which had not been reported as mortalities were still in the population in the survey area and could be resighted. That assumption probably led to exaggerated estimates of mule deer numbers along Lake Koocanusa. Beginning in FY92, we became more conservative and did not include neckbands, inactive radio collars or, since FY93, ear streamers from previous years markings in the pool of potentially observable marked animals and population estimates declined correspondingly. The assumption that all current year ear streamered animals are alive and in the sample area is still liberal, but should provide more precise estimates of actual population size. We now estimate that about 500 mule deer winter in the area from Tenmile Creek to Rocky Gorge.

Table 4. Individually recognizable marked animals observed on the Tenmile winter range during population surveys, FY92.

Species	MAID	Marker Type	Color	Symbol
Mule Deer	UNK ¹	Neckband	Yellow/Black	Center Stripe
Mule Deer	17	Radio Collar	White/Black	Stars
Mule Deer	90	Neckband	Yellow/Black	Donuts
Mule Deer	UNK ¹	Neckband	White/Black	Open Squares
Mule Deer	39	Neckband	White/Black	Gates
Mule Deer	102	Radio Collar	Yellow/Black	Dashes
Mule Deer	91	Radio Collar	Green/White	Center Stripe
Mule Deer	21	Radio Collar	White/Black	Open Triangles
Mule Deer	34	Radio Collar	Yellow/Black	Arrows
Mule Deer	96	Neckband	Green/White	Crescent Moons
Mule Deer	75	Neckband	White/Black	Daggers
Mule Deer	135	Neckband	White/Black	M's
Mule Deer	UNK ¹	Neckband	Blue/White	Gates
Mule Deer	34	Radio Collar	Blue/White	Chevrons
Mule Deer	UNK ¹	Neckband	Blue/White	Dashes
Bighorn Sheep	B04	Radio Collar	Red	None
Bighorn Sheep	B23 ¹	Radio Collar	White/Black	X's
Bighorn Sheep	66	Neckband	Blue/White	Open Squares
Bighorn Sheep	B28	Neckband	Red/White	Slashes
Bighorn Sheep	UNK ¹	Radio Collar	Nondescript	None
Bighorn Sheep	B27	Neckband	Yellow/Black	Arrows
Bighorn Sheep	B03	Radio Collar	White	None
Bighorn Sheep	B13	Radio Collar	Green	None

1. Couldn't determine the precise identity of this animal. The description of the neckband is incorrect.

Table 5. Mule deer population estimates, Tenmile winter range, 1990 - 1993.

Survey		No Animals Observed							
Date	MM	FF	AD	YG	UC	Total	Marked	Observed	Estimate
12/90					265	265	56	20	721 ¹
4/91			86	69	0	155	62	8	1,075 ¹
4/92					261	261	68	36	488 ²
						261	72	15	1,194 ³
						261	140	49	739 ⁴
4/93					164	164	152	45	548 ²
						164	30	13	364 ⁵

1. Population estimate calculated using all marked animals.
2. Population estimate calculated using ear streamers only.
3. Population estimate calculated using neckbands and radio collars only.
4. Population estimate calculated using ear streamers, neckbands and radio collars.
5. Population estimate calculated using radio collars only.

BIGHORN SHEEP

FY92

The bighorn sheep population survey was flown concurrent with the mule deer survey. A total of 50 bighorns were observed including 26 ewes, 21 rams and 3 lambs. Ten of 26 marked animals, 7 ewes and 3 rams, were observed. They included 8 individually marked animals (Table 4) and 2 with yellow ear streamers. Population estimates calculated using all marked animals (M=26, N=124) and ear streamers only (M=13, N=237) gave markedly different results (Table 10). Attempts to resurvey the area to collect data for another set of population estimates were prevented by weather and scheduling conflicts.

FY93

Two bighorn sheep population surveys were flown in FY93, a classification flight on January 6 and a green grass survey of the Tenmile - Rocky Gorge area on April 20. Too few sheep were observed during the April survey to calculate a population estimate, so the population size was estimated from the January classification survey. Based on work done in the mid 1980's, we estimated an observation rate of 42% for sheep during December surveys. Using that figure and the 59 sheep observed in January, we estimated a population of 148 sheep in the Ural Tweed population (Table 7).

Movements and Distribution

Radio relocation surveys were attempted monthly. A subjective examination of the data indicated the distribution was generally similar to previous years. However we documented the first instance of a marked animal crossing the reservoir to summer on the west side of the reservoir. This 2 1/2 year old doe was marked at Rock Gut on January 22, 1992 and relocated in Dark Creek in June 1992. The animal apparently remained in Dark Creek until

it died from unknown cause in December 1992. We have documented instances of animals, particularly yearling males, dispersing from the Tenmile winter range to other areas including the Whitefish Range. One such animal was harvested on Krinkle Horn Mountain approximately 25 miles from the winter range where it was marked as a male fawn.

Table 7. Bighorn sheep population estimates, Ural-Tweed Bighorn Sheep Range, 1990-1993.

Survey		No Animals Observed							
Date	MM	FF	AD	YG	UC	Total	Marked	Observed	Estimate
4/85	14	6	20	4	0	24	7	2	66 ¹
12/85	8	14	22	9	0	31	10	3	87 ¹
12/86	19	17	36	10	1	47	12	5	103 ¹
12/87	16	18	34	7	0	41	24	13	74 ¹
2/89	20	17	37	14	0	51	25	10	122 ¹
2/90	12	29	41	175	0	58	24	5	245 ¹
12/90	18	34	52	16	0	68	18	6	186 ¹
4/92	21	26	47	3	0	50	13	2	237 ²
							26	10	124 ¹
1/93	13	36	49	10	0	59			148 ³
4/93		9	9	0	0	9	0	0	NC ⁴

1. Population estimates calculated using all marked animals.
2. Population estimates calculated using earstreamers only.
3. Population estimates calculated using density estimate.
4. Not Calculated.

VEGETATION STUDIES

FY92 ACTIVITIES

Ecodata plots were established at representative treatment and control areas in the Tenmile winter range (Table 8). Data collection procedures were selected and forms were prepared. Vegetation surveys were not conducted during FY92. The Ecodata Plots that were conducted in July 1992 will be covered in the final report.

FY93 ACTIVITIES

No vegetation surveys were completed during FY93. Future efforts will be based on recommendations in a final report to the WMAC in FY95 in accordance with the schedule outlined in the Five-year Plan (Nyberg 1990).

Table 8. Description of vegetation monitoring locations established in the Tenmile winter range, FY92.

NAME	LOCATION	UTMX	UTMY
TM1	Tenmile Creek	63159	538381
TM2	Tenmile Creek	63137	538402
CC1	Common Control	63042	538428
CC2	Common Control	63044	538435
CC3	Tenmile Creek	63064	538425
ESC1	Sheep Creek	62990	538455
ESC2	Sheep Creek	62979	538458
WSC1	Sheep Creek	62953	538496
WSC2	Sheep Creek	62947	538502

REFERENCES CITED

- Clover, M. R.1954.A portable deer trap and catch net.Calif. Fish and Game 40:367-373.
- Hays, R. L., C. Summers and W. Seitz.1981.Estimating wildlife habitat variables. USDI FWS West Energy and Land Use Team.FWS/OBS - 81/47.111 pp.
- Hitchcock, C. L. and A. Cronquist.1978.Flora of the Pacific Northwest.Univ of Wash Press Seattle, WA.730 pp.
- Jones, R. F.1968.A board to measure cover used by prairie grouse.JWM (1):28-31.
- Nudds, T. D.1977.Quantifying the vegetative structure of wildlife cover.Wildl. Soc. Bull. 5(3):113-117.
- Nyberg, H. E.1990.Wildlife Mitigation Program: Five Year Operating Plan (FY1992 - 1996) MDFWP.Kalispell, MT.
- Rice, W. R. and J. D. Harder.1977.Application of multiple aerial sampling to mark - recapture census of white-tailed deer.JWM 41(2):197-206.
- Robinette, W. L., D. A. Jones, G. Rogers and J. S. Gashweiler.1957.Notes on tooth development and wear for Rocky Mountain mule deer.JWM 21(2):134-153.
- Schmidt, E. and D. Johnson.1993.Libby wildlife mitigation project.Quarterly report. MDFWP.Kalispell, MT.10pp
- Stansbery, B. J.1991.Distribution, movements and habitat use during spring, summer and fall by mule deer in the North Salish Mountains, Montana.Unpubl. MS Thesis.MSU, Bozeman, MT.64 pp.
- Stelfox, J. G.1976.Range ecology of Rocky Mountain bighorn sheep in Canadian National Parks.Can. Wildl. Service Rep.Series No. 39.50 pp
- Wishart, W.1978.Bighorn Sheep. In: Big game of North America, ecology and management (eds)J. L. Schmidt and D. L. Gilbert.pp 160-171.Stackpole Books.Harrisburg, PA.494 pp.

- Yde, C. A. 1991. Evaluation plan for the Koocanusa Long-term Management Plan. USDE, BPA Project 87-55. 22 pp.
- Yde, C. A. and K. Coates. 1990. Northwest Montana Wildlife Habitat Enhancement: Libby bighorn sheep and mule deer project. Annual Report. MDFWP. Helena, MT. 89 pp.
- Yde, C. A., K. Coates and B. Stansbery. 1991. Northwest Montana Wildlife Habitat Enhancement: Libby bighorn sheep and mule deer project. Annual Report. MDFWP. Helena, MT. 70 pp.
- Yde, C. A. and M. Lamoreux. 1992. Libby wildlife mitigation project. Quarterly report. MDFWP. Kalispell, MT. 9pp
- Yde, C. A. and A. O. Olsen. 1984. Wildlife impact assessment and summary of previous mitigation related to hydroelectric projects in Montana. Vol I - Libby Dam. MDFWP report to BPA Proj. 83-464. Helena, MT. 91pp and appendices.



MD DTB

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	NUMBER	TRAP YEAR	DATE	STATUS	RECOVERED	SITE	WR	SEX	AGE	TYPE	FREQUENCY	COLOR	PATTERN	ET-L	ET-R
1	???	1993	930112	U		PG2	TM	F	8	S		BLU		0128	0128
2	001	1985	8505--	U		RGT	TM	M	1.5	NB		ORANGE	NONE	---	---
3	002	1987	870117	R		SC2	TM	F	4.5	R	151.390	WHT/BLK	DOUBLE ROW DOTS	899	900
4	002	1992	920131	R		RG1	TM	F	9.5	R	149.820	WHT/BLK	DOUBLE ROW DOTS	899	900
5	002	1993	930323	A		PG1	TM	F	5.5	S/R	149.820	BLU	W/BLK DR DOTS	0272	0272
6	003	1987	870122	D	870312	SC1	TM	F	7	R	151.370	WHT/BLK	ALT STRIPES	880	884
7	004	1987	870124	U		SC1	TM	M	.5	NB		ORG/BLK	HR-GLASS/SQUARE		
8	005	1987	870204	D	8710??	RGT2	TM	F	1.5	R	150.830	WHT/BLK	DOUGHNUTS	894	895
9	006	1987	870204	U		MP36	TM	F	4.5	NB		GRN/YEL	DASHES	884	885
10	007	1987	870211	U		MP36	TM	F	.5	NB		YEL/BLK	BARS		
11	008	1987	870227	R		RGT1	TM	F	1.5	NB		GRN/WHT	4'S	981	982
12	008	1989	881216	R		AG1	TM	F	3.5	R	151.950	BLU/WHT	STARS	981	982
13	008	1992	920227	U		AG1	TM	F	6.5	S		YELLOW		070	070
14	009	1987	870227	U		SH1	SH	F	1.5	NB		BLK/WHT	X'S	983	984
15	010	1987	870307	U		RGT1	TM	M	.5	NB		YELLOW	SOLID	997	
16	011	1987	870308	U		SH	SH	F	.5	NB		DRK/BLU	SOLID	998	
17	012	1987	870308	R		SH	SH	F	3.5	NB		WHITE	SOLID	999	
18	012	1988	880124	U		SH2	SH	F	4.5	R	151.660	RED/WHT	++	999	
19	013	1987	870312	D		RGT2	TM	M	2.5	NB		YEL/BLK	LARGE DOTS		
20	014	1987	870424	U	881105	RGT2	TM	F	.5	R	150.710	WHT/BLK	STARS		
21	015	1987	870427	R		MP36	TM	F	2.5	R	151.360	WHT/BLK	PLUSES	993	994
22	015	1989	890422	D	4-92	BG1	TM	F	4.5	R	151.920	RED/BLK	CHECKERBOARD	993	994
23	016	1987	870428	U		MP36	TM	F	4.5	R	151.370	WHT/BLK	ALTERNATE BARS		
24	017	1987	870501	U		MP36	TM	F	3	R/S	151.580	YELLOW			
25	018	1987	870509	R		MP36	TM	F	.5	R	150.860	BLK/ORG	UNKNOWN	991	992
26	018	1992	920129	D	6-93	BG2	TM	F	9.5	R	149.980	WHT/BLK	H'S	995	996
27	019	1988	871210	R		MP36	TM	F	.5	R	151.080	YEL/BLK	ALTERNATING	111	112
28	019	1989	890112	R		MP3651	TM	F	2.5	R	151.810	YEL/BLK	H'S	111	267
29	019	1992	920122	A		MP36.52	TM	F	4.5	R	151.830	WHT/BLK	DASH - BAR	111	267
30	020	1988	871210	D	901103	SH1	SH	F	3.5	R	151.490	RED/GRN	ALTERNATE BARS		
31	021	1988	871211	R		MP36	TM	F	5.5	R	151.450	BLK/WHT	DIAMONDS	109	110
32	021	1992	920211	D		SC1	TM	F	9.5	R	149.860	WHT/BLK	OPEN TRIANGLES	109	110
33	021	1993	930112	U		SC1	TM	F	6	S/R	149.860	BLU	W/BLK OPEN TRI	0124	0124
34	022	1988	871212	R		RGT2	TM	F	.5	R	151.460	WHT/BLK	SAWTOOTH		
35	022	1988	880123	D	901023	RGT2	TM	F	.5	R	151.710	WHT/BLK	CENTER STRIPE	114	113
36	023	1988	871214	D	88/89	RGT1	TM	F	6.5	R	151.470	WHT/BLK	WAVY LINE	115	116
37	024	1988	871216	D	88/89	RG5	TM	F	3.5	R	151.500	BLU/WHT	DASHES	119	120
38	025	1988	871216	U		SH1	SH	F	4	R	151.530	RED/WHT	DASHES		
39	026	1988	871218	U		SH1	SH	M	.5	NB		RED/WHT	LARGE DOTS	121	123
40	027	1988	871218	U		SH2	SH	F		R	151.480	RED	NONE	124	125
41	028	1988	871218	R		RGT2	TM	F	.5	NB		WHT/RED	TRIANGLES	122	126
42	028	1992	920319	R		SC	TM	F	4.5	NB/S		YELLOW	W/RED TRIANGLES	47	47

NUMBER	TRAP YEAR	DATE	STATUS	RECOVERED	SITE	WR	SEX	AGE	TYPE	FREQUENCY	COLOR	PATTERN	ET-L	ET-R
43	028	1993	930113	R		PG2	TM	F	6.5	S			0143	0143
44	028	1993	930318	U		SC2	TM	F	6.5	S/R	151.430	BLU	0143	0143
45	029	1988	880120	R		SC1	TM	F	5	R	151.620	BLU/BLK	131	132
46	029	1992	920326	U		RG2	TM	F	9.5	S		YELLOW	096	096
47	030	1988	880121	R		SC1	TM	F	.5	R	151.570	WHT/BLK	134	133
48	030	1992	920123	A		MP36.51	TM	F	4.5	R	151.420	WHT/BLK	134	133
49	031	1988	880122	D	6/92	MP3652	TM	F	4	R	151.430	YEL/BLK	120	150
50	032	1988	880122	R		SC1	TM	F	.5	R	151.720	YEL/BLK	139	140
51	032	1992	920221	U		RG2	TM	F	4.5	S		YELLOW	139	140
52	033	1988	880122	U		RG5	TM	F	.5	R	151.510	BLU/WHT	141	142
53	034	1988	880124	U		MP36	TM	F	3.5	R	151.700	YEL/BLK	143	144
54	035	1988	880124	U		RG2	TM	F	4.5	R	151.460	WHT/BLK	145	146
55	036	1988	880124	U		RG2	TM	F	8	R	151.670	BLU/WHT	147	148
56	037	1988	880124	U		SH1	SH	F	8	R	151.650	RED/WHT	149	151
57	038	1988	880125	U		MP36	TM	F	.5	NB		YEL/BLK	152	153
58	039	1988	880125	R		SC1	TM	F	2.5	NB		YEL/BLK	152	153
59	039	1992	920320	R		RG1	TM	F	6.5	S/NB		YELLOW	154	155
60	039	1993	930319	A		SC2	TM	F	1.5	S/R	151.950	BLU	0271	0271
61	040	1988	880125	U		RG2	TM	M	.5	NB		WHT/BLK	-	-
62	041	1988	880225	U		SH1	SH	F	5.5	R	151.910	RED/WHT	161	160
63	042	1988	880225	U		SH2	SH	F	.5	R	151.900	RED/WHT	162	163
64	043	1989	881204	R		RG1	TM	F	4.5	R	151.890	BLU/WHT	170	171
65	043	1992	920205	R		RG3	TM	F	7	R	149.800	WHT/BLK	170	171
66	043	1993	930111	A		RG7	TM	F	8	S/R	149.800	BLU	0113	0113
67	044	1989	881205	U		AG3	TM	M	1.5	TAGS		RED	172	173
68	045	1989	881207	D	901101	AG3	TM	F	.5	R	151.830	BLU/WHT	175	174
69	046	1989	881208	U		RG5	TM	F	5	R	151.840	BLU/WHT	-	-
70	047	1989	881208	D	FALL 90	AG3	TM	M	3	TAGS		RED	-	-
71	048	1989	881215	R		AG2	TM	F	6	R	151.850	BLU/WHT	230	231
72	048	1993	930113	A		PG1	TM	F	11	S/R	151.720	BLU	0142	0142
73	049	1989	881215	U		RG1	TM	F	7	R	151.870	BLU/WHT	226	227
74	050	1989	881215	U		RG5	TM	F	2.5	R	151.880	BLU/WHT	239	238
75	051	1989	881216	R		RG5	TM	M	1.5	TAGS		RED	228	229
76	051	1992	920221	U		RG4	TM	M	4.5	S		YELLOW	060	060
77	052	1989	881216	R		RG1	TM	F	4.5	R	151.210	BLU/WHT	236	240
78	052	1992	920221	U		AG3	TM	F	8	S		YELLOW	062	062
79	053	1989	890106	R		AG1	TM	F	5.5	NB		BLU/WHT	241	242
80	053	1993	930111	U		PG2	TM	F	6	S/NB		BLU	0110	0110
81	054	1989	890107	U		RG6	TM	F	8	NB		BLU/WHT	101	102
82	055	1989	890107	R		AG3	TM	F	6	NB		BLU/WHT	246	
83	055	1993	930202	U		MP36.5	TM	F	4.5	S		BLU	0202	0202
84	056	1989	890107	U		AG2	TM	M	.5	TAGS		RED	247	

NUMBER	TRAP YEAR	DATE	STATUS	RECOVERED	SITE	WR	SEX	AGE	TYPE	FREQUENCY	COLOR	PATTERN	ET-L	ET-R
85	057	1989	890108	U	MC3	MC	F	7	R	151.970	GRN/WHT	SQUARES	281	282
86	058	1989	890108	U	MC1	MC	F	3.5	R	151.980	GRN/WHT	CHEVRONS		
87	059	1989	890108	R	RG5	TM	F	1.5	NB		BLU/WHT	BAR - DASH		
88	059	1993	930221	U	RG1	TM	F	5.5	S/NB	-	BLU	BLU/WHT BARDASH	0254	0252
89	060	1989	890109	U	MP36	TM	F	.5	TAGS		RED	ROTO TAGS	248	249
90	061	1989	890109	U	AG1	TM	F	.5	TAGS		RED	ROTO TAGS	250	201
91	062	1989	890109	R	AG2	TM	F	3.5	NB		BLU/WHT	DONUTS	202	203
92	062	1992	920221	D	AG1	TM	F	5.5	S		YELLOW		0064	0064
93	063	1989	890109	U	RG3	TM	M	1.5	TAGS		RED	ROTO TAGS	204	205
94	064	1989	890109	U	RG6	TM	F	4.5	NB		BLU/WHT	CENTER STRIPE	208	209
95	065	1989	890109	U	RG6	TM	M	.5	TAGS		RED	ROTO TAGS	206	207
96	066	1989	890109	U	RG5	TM	F	.5	NB		LBL/WHT	OPEN TRIANGLES	210	211
97	067	1989	890109	U	MC3	MC	M	.5	TAGS		RED	ROTO TAGS	212	213
98	068	1989	890109	U	MC2	MC	M	.5	TAGS		RED	ROTO TAGS	214	215
99	069	1989	890110	R	RGT2	TM	F	.5	NB		WHT/BLK	CHEVRONS	221	222
100	069	1993	930206	U	SC2	TM	F	4.5	S/NB		BLU	W/BLK CHEVRONS	0230	0230
101	070	1989	890110	R	BG1	TM	F	.5	NB		YELLOW	2'S	223	224
102	070	1992	920403	U	BG1	TM	F	3.5	S		YELLOW		099	099
103	071	1989	890110	D	MC3	MC	F	.5	R	150.930	GRN/WHT	BAR	218	219
104	072	1989	890110	D	MC1	MC	F	.5	TAGS		RED	ROTO TAGS	220	225
105	073	1989	890110	U	MC2	MC	M	2.5	TAGS		RED	ROTO TAGS	251	252
106	074	1989	890111	R	MP3651	TM	M	1.5	TAGS		RED	ROTO TAGS	253	254
107	074	1992	920117	U	RGT2	TM	M	4.5	S		YELLOW		001	001
108	075	1989	890111	U	RGT2	TM	F	5.5	R	151.790	WHT/BLK	DAGGERS	255	256
109	076	1989	890111	U	MP36	TM	M	.5	TAGS		RED	ROTO TAGS	257	258
110	077	1989	890111	R	BG1	TM	F	2.5	R	151.800	YEL/BLK	+'S	257	258
111	077	1992	920123	D	TH2	TM	F	5.5	R	151.500	WHT/BLK	STARS		
112	078	1989	890111	D	MC1	MC	F	1.5	R	151.990	GRN/WHT	CIRCLES	261	262
113	079	1989	890111	U	MC3	MC	F	.5	R	150.920	GRN/WHT	2'S	263	264
114	080	1989	890111	U	MC2	MC	F	8	TAGS		RED	ROTO TAGS	265	266
115	081	1989	890112	R	RGT2	TM	F	.5	R	151.220	WHT/BLK	CRESCENT MOONS	260	269
116	081	1993	930111	R	RGT2	TM	F	4	S	151.390	BLU	ALTERNATE SQUAR	0108	0108
117	081	1993	930317	A	SC2	TM	F	4.5	S	151.390	BLU	BLU/WHT CHKBRD	081	081
118	082	1989	890112	U	RGT1	TM	M	.5	TAGS		RED	ROTO TAGS	271	272
119	083	1989	890112	R	SC1	TM	M	.5	TAGS		RED	ROTO TAGS	273	274
120	083	1991	910204	U	TM1	TM	M	3.5	S		YELLOW		028	028
121	084	1989	890112	R	MP36	TM	F	6.5	NB		YEL/BLK	CHEVRONS	277	276
122	084	1993	930206	A	BG2	TM	F	10	S	151.920	BLU	BLU/WHT TRIANGLE	0227	0227
123	085	1989	890112	D	RG4	TM	F	1.5	R	151.240	BLU/WHT	TRIANGLES	275	278
124	086	1989	890112	U	MC1	MC	M	.5	TAGS		RED	ROTO TAGS	279	280
125	087	1989	890113	U	RGT1	TM	F	6.5	R	150.690	WHT/BLK	BAR - CIRCLE	283	284
126	088	1989	890113	U	RGT2	TM	M	.5	TAGS		RED	ROTO TAGS	285	286

	NUMBER	TRAP YEAR	DATE	STATUS	RECOVERED	SITE	WR	SEX	AGE	TYPE	FREQUENCY	COLOR	PATTERN	ET-L	ET-R
127	089	1989	890113	U		SC1	TM	F	.5	NB		RED	SLASHES	287	288
128	090	1989	890113	U		BG1	TM	F	1.5	NB		YEL/BLK	DONUTS	290	289
129	091	1989	890113	U		MC1	MC	F	2.5	R	150.780	GRN/WHT	CENTER STRIPE	291	292
130	092	1989	890113	U		MC3	MC	F	1.5	R	151.265	GRN/WHT	DASHES	293	294
131	093	1989	890421	R		MP3651	TM	F	1.5	R	151.930	RED/WHT	TRIANGLES	176	177
132	093	1992	920219	R		MP3652	TM	F	4.5	R	149.840	YEL/BLK	HEARTS	176	177
133	093	1993	930202	A		MP36.5	TM	F	5.5	S/R	149.840	BLU	YEL/BLK HEARTS	0194	0194
134	094	1989	890421	R		RG2	TM	F	.5	R	151.940	RED/WHT	DAGGERS	179	178
135	094	1992	920123	R		RG2	TM	F	3.5	R	151.470	WHT/BLK	DONUTS	179	178
136	094	1993	930111	A		AG1	TM	F	4.5	S/R	151.470	BLU	W/BLK DONUTS	0111	0111
137	095	1989	890421	U		BG1	TM	M	1	TAGS		RED	ROTO TAGS	180	181
138	096	1989	890422	U		MP3651	TM	F	7	R	151.180	GRN/WHT	CRESCENT MOONS	---	---
139	097	1989	890422	U		RG2	TM	M	.5	TAGS		RED	ROTO TAGS	182	183
140	098	1989	890423	U		AG1	TM	M	.5	TAGS		RED	ROTO TAGS	184	185
141	099	1989	890423	R		RG6	TM	F	4.5	R	151.060	GRN/WHT	+'s	186	187
142	099	1992	920326	U		RG6	TM	F	7.5	S		YELLOW		093	093
143	100	1989	890423	R	920219	BG1	TM	F	4.5	R	150.800	GRN/WHT	TRIANGLES	188	189
144	100	1992	920219	R		BG1	TM	F	7.5	R	149.880	WHT/BLK	HEARTS	189	189
145	100	1993	930113	A		BG1	TM	F	8.5	R	149.880	BLU	WHT/BLK HEARTS	0135	0135
146	101	1989	890424	U		RG1	TM	F	.5	R	150.910	WHT/BLK	SQUARES	190	---
147	102	1989	890424	U		MP36	TM	F	2.5	R	151.755	YEL/BLK	DASHES	191	---
148	103	1989	890424	R	920204	BG1	TM	F	3.5	R	151.100	RED/WHT	CENTER STRIPE	---	192
149	103	1992	920204	A		BG2	TM	F	6	R	151.490	WHT/BLK	N'S	---	192
150	104	1989	890424	D	6-92	RG2	TM	F	.5	R	150.710	WHT/BLK	Y'S	193	
151	105	1989	890425	A		RG6	TM	F	3.5	R	150.830	WHT/BLK	X'S	194	195
152	106	1989	890425	U		RG5	TM	F	6.5	NB		LBL/WHT	SLASHES	199	200
153	107	1990	900221	U		RG1	TM	M	.5	TAGS		RED	ROTO TAGS		838
154	108	1990	900221	U		RG1	TM	M	.5	TAGS		RED	ROTO TAGS		167
155	109	1988	880227	U		TM1	TM	M	.5	TAGS		RED	ROTO TAGS	166	167
156	110	1988	880228	U		TM1	TM	M	.5	TAGS		RED	ROTO TAGS	168	169
157	111	1992	920129	D	11-92	TM1	TM	F		R	151.160	WHT/BLK	-	-	-
158	112	1992	920117	R		BG1	TM	F	5.5	R	151.360	WHT/BLK	DB ROW DASHES	003	003
159	112	1993	930323	A		TM2	F	5	6.5	S/R	151.360	BLU	W/BLK DBL DASH	0270	0270
160	113	1992	920117	U		MP36	TM	F	.5	S		YELLOW		004	004
161	114	1992	920117	R		MP3652	TM	F	3.5	R	151.460	RED/WHT	Y'S	005	005
162	114	1993	930121	R		MP35.5	TM	F	4.5	R	151.460	RD/WHT	RED/WHT Y'S	005	005
163	114	1993	930123	A		36.5	TM	F	4.5	S/R	151.460	BLU	RED/WHT Y'S	0175	0175
164	115	1992	920122	D	3-93	RG4	TM	F	2.5	S/R	151.520	YELLOW	W/BLK DBL STRIP	006	006
165	116	1992	920122	U		RG3	TM	F	.5	S		YELLOW		007	007
166	117	1992	920122	U		RG1	TM	M	3.5	S		YELLOW		008	008
167	118	1992	920122	U		AG3	TM	M	4	S		YELLOW		009	009
168	119	1992	920122	U		AG2	TM	M	.5	S		YELLOW		010	010

	NUMBER	TRAP YEAR	DATE	STATUS	RECOVERED	SITE	WR	SEX	AGE	TYPE	FREQUENCY	COLOR	PATTERN	ET-L	ET-R
169	120	1992	920122	R		RGT-1	TM	M	.5	S					
170	120	1993	930120	U		SC2	TM	M	1.5	S		YELLOW		011	011
171	121	1992	920122	D	3-93	MP3651	TM	F	7	R	151.710	WHT/BLK	+ 'S	0156	0156
172	122	1992	920122	R		BG1	TM	F	.5	S		YELLOW		012	012
173	122	1993	930113	U		MP35	TM	F	1.5	S		BLU		013	013
174	123	1992	920122	D	4-92	TM1	TM	F	5.5	R	151.080	WHT/BLK	ZIG ZAG	0137	0137
175	124	1992	920123	U		SC1	TM	F	.5	S		YELLOW		014	014
176	125	1992	920123	U		SC1	TM	F	.5	S		YELLOW		015	015
177	126	1992	920123	D	920205	RG5	TM	M	.5	S		YELLOW		016	016
178	127	1992	920123	U		RG4	TM	F	1.5	S		YELLOW		0017	0017
179	128	1992	920123	U		RG2	TM	M	.5	S		YELLOW		0018	0018
180	129	1992	920123	R		BG1	TM	M	1.5	S		YELLOW		0020	0020
181	129	1993	930111	U	-	TM1	TM	M	2.5	S		YELLOW		0021	0021
182	130	1992	920123	U		MP36	TM	F	2.5	S/R	150.780	BLU		0117	0117
183	131	1992	920124	U		TM1	TM	M	.5	S		YELLOW	G/WHT STRIPE	0022	0022
184	132	1992	920124	U		MP36	TM	F	.5	S		YELLOW		0023	0023
185	133	1992	920128	R		RG1	TM	M	.5	S		YELLOW		0024	0023
186	133	1993	930122	U		SC1	TM	M	1.5	S		YELLOW		0026	0026
187	134	1992	920131	U		BG4	TM	F	.5	S		YELLOW		0171	0171
188	135	1992	920204	R		RG5	TM	F	7.5+	R	149.870	WHT/BLK	M'S	0027	NONE
189	135	1993	930220	D	920227	RG2	TM	F	8	S/R	149.870	BLU	WHT/BLK M'S	0029	0029
190	136	1992	920205	R		BG2	TM	M	.5	S		YELLOW		0249	0249
191	136	1993	930121	U		MP35.5	TM	M	1.5	S		BLU		0030	030
192	137	1992	920205	A		TM1	TM	F	3.5	R	149.960	YEL/BLK	Y'S	0165	0165
193	138	1992	920211	D	11-93	TM1	TM	F	3.5	R	149.940	YEL/BLK	CKBOARD	0031	0031
194	139	1992	920211	A		RG5	TM	F	5.5	R	149.920	YEL/BLK	CHRESENT MOONS	0032	0032
195	140	1992	920211	R		AG2	TM	F	2.5	S		YELLOW		0034	0034
196	140	1993	930203	A		PG1	TM	F	3.5	S/R	150.860	YELLOW		0035	0035
197	141	1992	920211	D	920214	AG1	TM	F	.5	S		BLU	BLU/WHT DBL STR	0206	0206
198	142	1992	920211	U		MP36.52	TM	M	.5	S		YELLOW		0036	0036
199	143	1922	920208	R		BG1	TM	F	4.5	S		YELLOW		0033	0033
200	143	1993	930126	R		MP36	TM	F	5.5	S		YELLOW		0039	0039
201	143	1993	930311	A		MP35.5	TM	F	5.5	S/R	149.920	BLU		0187	0187
202	144	1992	920227	R		SC1	TM	F	3.5	S		BLU	BLU/WHT E'S	0187	0187
203	144	1993	930112	R		MP36	TM	F	4.5	S		YELLOW		0040	0072
204	144	1993	930203	A		MP36	TM	F	4.5	S/R	151.210	BLU		0122	0122
205	145	1992	920212	R		MP36.51	TM	M	.5	S		YELLOW	BLU/WHT MOONS	0122	0122
206	145	1993	930120	D	11-93	TM1	TM	M	1.5	S		BLU		0041	0041
207	146	1992	920212	R		RG5	TM	F	2.5	S		YELLOW		0161	0161
208	146	1993	930113	U		RG2	TM	F	2.5	S		BLU		0044	0044
209	147	1922	920213	U		BG3	TM	F	1.5	S		YELLOW		0148	0148
210	148	1992	920213	R		MP36.51	TM	F	1.5	S		YELLOW		045	045
														046	046

	NUMBER	TRAP	YEAR	DATE	STATUS	RECOVERED	SITE	WR	SEX	AGE	TYPE	FREQUENCY	COLOR	PATTERN	ET-L	ET-R
211	148	1993	930220	U			SC1	TM	F	1.5	S		BLU		0248	0248
212	149	1992	920213	U			RG6	TM	M	1.5	S		YELLOW		049	049
213	150	1992	920214	U			BG4	TM	F	2.5	S		YELLOW		050	050
214	151	1992	920214	U			BG1	TM	M	1.5	S		YELLOW		051	051
215	152	1992	920218	U			BG2	TM	F	.5	S		YELLOW		052	052
216	153	1992	920218	U			MP35.52	TM	F	3.5	S		YELLOW		053	053
217	154	1992	920219	U			SC1	TM	F	.5	S		YELLOW		054	054
218	155	1992	920220	U			MP36.51	TM	F	6+	S		YELLOW		055	055
219	156	1992	920220	U			BG3	TM	F	.5	S		YELLOW		056	056
220	157	1992	920220	U			MP36.52	TM	M	.5	S		YELLOW		059	059
221	158	1992	920221	R			AG2	TM	M	2.5	S		YELLOW		063	063
222	158	1993	930207	U			RG1	TM	M	3.5	S		BLU		0236	0236
223	159	1992	920221	U			SC1	TM	F	.5	S		YELLOW		067	067
224	160	1992	920221	R			MP36.51	TM	F	7	S		YELLOW		068	068
225	160	1993	930112	U			MP36	TM	F	8	S		BLU		0123	0123
226	161	1992	910221	U			BG3	TM	F	4.5	S		YELLOW		069	069
227	162	1992	920227	R			RG6	TM	F	3.5	S		YELLOW		071	071
228	162	1993	930209	U			RG8	TM	F	4.5	S		BLU		0245	
229	163	1992	920227	R			BG1	TM	F	6+	S		YELLOW		073	073
230	163	1993	930120	U			35.5	TM	F	7.5	S		BLU		0153	0153
231	164	1992	920228	R			AG1	TM	F	1.5	S		YELLOW		0075	0075
232	164	1993	930207	U			RGT1	TM	F	2.5	S		BLU		0234	0234
233	165	1992	920305	U			BG4	TM	F	2.5	S		YELLOW		0072	0040
234	166	1992	920303	R			RGT2	TM	F	6+	S		YELLOW		0076	0076
235	166	1993	930112	U			RGT1	TM	F	7	S		BLU		0126	0126
236	167	1992	920304	U			BG2	TM	F	2.5	S		YELLOW		0077	0077
237	168	1992	920305	U			AG3	TM	M	.5	S		YELLOW		0078	0078
238	169	1992	920306	U			AG1	TM	F	5.5	S		YELLOW		0079	0079
239	170	1992	920310	A			RG4	TM	F	4.5	S/R	149.870	YELLOW	WHT/BLK M'S	0080	0080
240	171	1992	920310	U			MP36.52	TM	M	2.5	S		YELLOW		0081	0081
241	172	1992	900311	R			BG4	TM	F	4.5	S		YELLOW		0083	0083
242	172	1993	930208	U			RG2	TM	F	6.5	S		BLU		0243	0243
243	173	1992	920311	U			AG1	TM	F	2.5	S		YELLOW		0084	0084
244	174	1992	920311	R			BG3	TM	M	.5	S		YELLOW		0085	0085
245	174	1993	930121	U			TM2	TM	M	1.5	S		BLU		0163	0163
246	175	1992	920318	U			BG3	TM	F	2.5	S		YELLOW		0086	0086
247	176	1992	920318	R			RG6	TM	M	.5	S		YELLOW		087	087
248	176	1993	930122	D	11-93		RG8	TM	M	1.5	S		BLU		0132	0132
249	177	1992	920319	R			MP36	TM	F	6.5	S		YELLOW		088	088
250	177	1993	930206	U			MP36.5	TM	F	7.5	S		BLU		0229	0229
251	178	1992	920324	U			MP36	TM	F	2.5	S		YELLOW		090	090
252	179	1992	920325	U			BG1	TM	M	1.5	S		YELLOW		092	092

	NUMBER	TRAP YEAR	DATE	STATUS	RECOVERED	SITE	WR	SEX	AGE	TYPE	FREQUENCY	COLOR	PATTERN	ET-L	ET-R
253	180	1992	920326	U		RG4	TM	F	3.5	S		YELLOW		094	094
254	181	1992	920401	U		MP36.51	TM	F	3.5	S		YELLOW		098	098
255	182	1991	910403	U		BG4	TM	F	4.5	S		YELLOW		0100	0100
256	183	1993	930111	U			TM	M	.5	S		BLU		0101	0101
257	184	1993	930111	D	930111	BG2	TM	F	.5	S		BLU		0102	0102
258	185	1993	930111	U		MP35	TM	F	3	S		BLU		0103	0103
259	186	1993	930111	U		MP36	TM	F	.5	S		BLU		0104	0104
260	187	1993	930111	U		SC1	TM	F	.5	S		BLU		0105	0105
261	188	1993	930111	U		SC2	TM	F	3	S		BLU		0106	0106
262	189	1993	930111	U		RGT1	TM	F	.5	S		BLU		0107	0107
263	190	1993	930111	U		PG1	TM	F	3	S		BLU		0109	0109
264	191	1993	930111	U		AG3	TM	M	.5	S		BLU		0112	0112
265	192	1993	930111	U		RG8	TM	F	.5	S		BLU		0114	0114
266	193	1993	930111	U		RG2	TM	F	2	S		BLU		0115	0115
267	194	1993	930111	U		RG1	TM	F	.5	S		BLU		0116	0116
268	196	1993	930112	U		TM1	TM	M	.5	S		BLU		0118	0118
269	197	1993	930112	U		BG1	TM	F	.5	S		BLU		0119	0119
270	198	1993	930112	U		BG2	TM	F	3	S		BLU		0120	0120
271	199	1993	930112	U		MP35	TM	F	.5	S		BLU		0121	0121
272	200	1993	930112	U		SC2	TM	M	4	S		BLU		0125	0125
273	201	1993	930112	U		PG1	TM	M		S		BLU		0127	0127
274	202	1993	930112	U		AG1	TM	F	6	S		BLU		0129	0129
275	203	1993	930111	U		AG2	TM	F	1.5	S		BLU		0130	0130
276	204	1993	930111	U		AG3	TM	F	1.5	S		BLU		0131	0131
277	205	1993	930111	U		RG1	TM	M	.5	S		BLU		0133	0133
278	206	1993	930113	U		TM1	TM	F	.5	S		BLU		0134	0134
279	207	1993	930113	U		BG2	TM	F	.5	S		BLU		0136	0136
280	208	1993	930113	R		SC2	TM	F	1.5	S		BLU		0139	0139
281	208	1993	930310	U		6C2	TM	F	1.5	S/R	151.160	BLU	BL/WT FEMALE S	0139	0139
282	209	1993	930113	U		AG2	TM	F	5.5	S		BLU		0144	0144
283	210	1993	930113	U		AG3	TM	F	3	S		BLU		0145	0146
284	211	1993	930113	U		RG8	TM	F	.5	S		BLU		0146	0145
285	212	1993	930113	U		RG9	TM	F	5	S		BLU		0147	0147
286	213	1993	930112	U		TM1	TM	F	.5	S		BLU		0149	0149
287	214	1993	930120	U		TM1	TM	F	.5	S		BLU		0150	0150
288	215	1993	930122	U		TM2	TM	M	.5	S		BLU		0151	0151
289	216	1993	930120	R		BG2	TM	F	1.5	S		BLU			0152
290	216	1993	930122	U		BG2	TM	S	1.5	S		BLU		0067	0152
291	217	1993	930120	U		36.5	TM	M	1.5	S		BLU		0154	0154
292	218	1993	930120	U		SC1	TM	F	4.5	S		BLU		0155	0155
293	219	1993	930120	U		PG1	TM	F	.5	S		BLU		0159	0159
294	220	1993	930120	U		AG1	TM	M	.5	S		BLU		0160	0160

NUMBER	TRAP YEAR	DATE	STATUS	RECOVERED	SITE	WR	SEX	AGE	TYPE	FREQUENCY	COLOR	PATTERN	ET-L	ET-R
295	221	1993	930120	U		TM2	TM	M	1.5	S		BLU	0162	0162
296	222	1993	930121	U		BG1	TM	F	.5	S		BLU	0164	0164
297	223	1993	930121	U		PG1	TM	F	.5	S		BLU	0166	0166
298	224	1993	930122	U		TM1	TM	F	.5	S		BLU	0167	0167
299	225	1993	930122	U		TM2	TM	M	.5	S		BLU	0168	0168
300	226	1993	930122	U		BG1	TM	F	1.5	S		BLU	0169	0169
301	227	1993	930122	D	930208	MP36.5	TM	F	1.5	S		BLU	0170	0170
302	228	1993	930122	U		PG2	TM	F	.4	S		BLU	0173	0173
303	229	1993	930123	U		TM2	TM	M	.5	S		BLU	0174	0174
304	230	1993	930124	R		TM1	TM	F	2.5	S		BLU	0177	0177
305	230	1993	930318	A		TM1	TM	F	2.5	S/R	151.450	BLU/WHT ZIG ZAG	0177	0177
306	231	1993	930124	U		SC2	TM	F	.5	S		BLU	0178	0178
307	232	1993	930124	U		BG1	TM	F	.5	S		BLU	0180	0180
308	233	1993	930124	U		BG2	TM	F	.5	S		BLU	0181	0181
309	234	1993	930124	U		TM1	TM	F	2.5	S		BLU	0182	0182
310	235	1993	930125	U		BG2	TM	F	3.5	S		BLU	0183	0183
311	236	1993	930125	U		SC2	TM	F	1.5	S		BLU	0184	0184
312	237	1993	930125	U		AG1	TM	M	.5	S		BLU	0185	0185
313	238	1993	930126	U		AG3	TM	F	.5	S		BLU	0188	0188
314	239	1993	930127	U		TM1	TM	F	1.5	S		BLU	0190	0190
315	240	1993	930202	A		TM1	TM	F	3.5	S/R	151.801	BLU SOLID	0191	0191
316	241	1993	930202	D	930204	BG2	TM	M	.5	S		BLU	0192	0192
317	242	1993	930202	U		MP35.5	TM	M	.5	S		BLU	0193	0193
318	243	1993	930202	A		SC1	TM	F	2.5	S/R	151.571	BLU/WHT/ARROW	0195	0195
319	244	1993	930202	U		RGT2	TM	F	1.5	S		BLU	0196	0196
320	245	1993	930202	A		PG2	TM	F	7	S/R	151.100	BLU/WHT/DASH	0197	0197
321	246	1993	930202	D	930202	AG1	TM	F	2	S		BLU	0198	0198
322	247	1993	930202	U		RG8	TM	F	.5	S		BLU	0199	0199
323	248	1993	930202	U		RG9	TM	M	.5	S		BLU	0200	0200
324	249	1993	930202	U		RG2	TM	F	2.5	S		BLU	0201	0201
325	250	1993	930202	U		MP35.5	TM	F	2.5	S		BLU	0203	0203
326	251	1993	930203	U		MP35.5	TM	M	.5	S		BLU	0204	0204
327	252	1993	930203	U		SC2	TM	F	.5	S		BLU	0205	0205
328	253	1993	930203	A		RG2	TM	F	4.5	S/R	151.080	BLU/WHT 2'S	0208	0208
329	254	1993	930203	U		RG1	TM	F	.5	S		BLU	0209	0209
330	255	1993	930202	U		MP36	TM	F	.5	S		BLU	0210	0210
331	256	1993	930204	U		TM1	TM	F	1.5	S		BLU	0211	0211
332	257	1993	930203	U		MP35.5	TM	F	7	S		BLU	0212	0212
333	258	1993	930204	U		MP36.5	TM	M	1.5	S		BLU	0213	0213
334	259	1993	930204	U		SC2	TM	F	5.5	S		BLU	0214	0214
335	260	1993	930204	U		RG1	TM	F	.5	S		BLU	0215	0215
336	261	1993	930204	U		AG1	TM	M	1.5	S		BLU	0216	0216

	NUMBER	TRAP YEAR	DATE	STATUS	RECOVERED	SITE	WR	SEX	AGE	TYPE	FREQUENCY	COLOR	PATTERN	ET-L	ET-R
337	262	1993	930204	U		RG8	TM	F	2.5	S		BLU		0217	0217
338	263	1993	930204	U		RG2	TM	F	3	S		BLU		0218	0218
339	264	1993	930204	U		MP35.5	TM	M	3.5	S		BLU		0219	0219
340	265	1993	930205	U		TM1	TM	F	10	S		BLU		0220	0220
341	266	1993	930205	U		MP35.5	TM	F	3	S		BLU		0221	0221
342	267	1993	930205	U		MP36.5	TM	F	1.5	S		BLU		0222	0222
343	268	1993	930205	U		PG1	TM	F	1.5	S		BLU		0223	0223
344	269	1993	930205	U		RG9	TM	F	.5	S		BLU		0224	0224
345	270	1993	930205	U		BG2	TM	M	3.5	S		BLU		0225	0225
346	271	1993	930206	U		TM1	TM	F	2.5	S		BLU		0226	0226
347	272	1993	930206	U		MP35.5	TM	F	3.5	S		BLU		0228	0228
348	273	1993	930206	U		RG2	TM	F	7.5	S		BLU		0231	0152
349	274	1993	930206	U		MP36	TM	M	.5	S		BLU		0232	0232
350	275	1993	930207	U		MP36	TM	F	2.5	S		BLU		0233	0233
351	276	1993	930207	U		RG1	TM	F	5.5	S		BLU		0235	023 5
352	277	1993	930207	U		RG1	TM	M	7.5	S		BLU		0237	0237
353	278	1993	930207	D	11-93	MP35.5	TM	M	.5	S		BLU		0238	0238
354	279	1993	930208	U		TM2	TM	F	.5	S		BLU		0239	0239
355	280	1993	930208	U		MP36	TM	F	1.5	S		BLU		0240	0240
356	281	1993	930208	U		MP36.5	TM	M	.5	S		BLU		0241	0241
357	282	1993	930209	D	930209	SC1	TM	F	5.5	S		BLU		0244	0244
358	283	1993	930220	U		TM1	TM	F	.5	S		BLU		0246	0246
359	284	1993	930220	U		TM2	TM	F	2.5	S		BLU		0247	0247
360	285	1993	930220	U		RG1	TM	M	.5	S		BLU		0250	0250
361	286	1993	930221	U		MP35.5	TM	M	3.5	S		BLU		0251	0251
362	287	1993	930221	D	930221	SC1	TM	F	2.5	S		BLU		0252	0252
363	288	1993	930221	U		RG9	TM	F	6.5	S		BLU		0253	0253
364	289	1993	930311	U		BG1	TM	M	1.5	S		BLU		0256	0256
365	290	1993	930311	A		BG2	TM	F	3.5	S/R	151.651	BLU	BLU/WHT A'S	0257	0257
366	291	1993	930311	U		SC2	TM	M	1.5	S		BLU		0258	0258
367	292	1993	930311	U		PG2	TM	F	.5	S		BLU		0259	0259
368	293	1993	930312	A		TM2	TM	F	6.5	S/R	150.709	BLU	BLU/W HORIZ BAR	0260	0260
369	294	1993	930312	U		PG1	TM	F	.5	S		BLU		0261	0261
370	295	1993	930316	U		MP35.5	TM	F	.5	S		BLU		0262	0262
371	296	1993	930316	U		PG1	TM	F	1.5	S		BLU		0263	0263
372	297	1993	930317	U		SC1	TM	F	.5	S		BLU		0264	0264
373	298	1993	930317	U		PG2	TM	M	3.5	S		BLU		0265	0265
374	299	1993	930323	A		BG1	TM	F	B.5	S/R	149.860	BLU	BL/WT DIAG/STRP	0266	0266
375	300	1993	930318	U		PG1	TM	M	1.5	S		BLU		0267	0267
376	301	1993	930317	U		AG1	TM	F	2.5	S		BLU		0268	0268
377	302	1993	930319	U		SC1	TM	F	.5	S		BLU		0269	0269

	NUMBER	TRAP YEAR	DATE	Status	RECOVERED	SITE	SEX	AGE	TYPE	FREQUENCY	COLOR	PATTERN	ET-L	ET-R
1	001	1985	841211	R	880127	1-MP36	F	1	R	151.770			854	855
2	001	1988	880127	D	930129	1-MP36	F	5	R	151.555	LBL/WHT	HEARTS	-	-
3	002	1985	841212	D	870203	1-MP365	M	2	R	151.580	WHT/BLK	ALT BLOCKS	857	856
4	003	1985	841213	U		3-PETGLC	M	1	R	151.560	WHT	SOLID	858	859
5	004	1985	841217	U		2-MP385	M	5	R	151.520	RED	SOLID	860	861
6	005	1985	850116	U		4-TWDCRK	F	2	R	150.950	WHT/BLK	CTR LINE	---	---
7	006	1985	850615	U		2-RGT	F	5	R	151.230	LBL	SOLID	863	864
8	007	1985	850616	U		2-RGT	F	5	R	151.250	R/W/BLU	ALT BLOCKS	869	870
9	008	1985	850615	D	881103	2-RGT	F	1	N		RED/WHT	CTR LINE	-	-
10	009	1985	850615	U		2-RGT	M	.5	S		RED/LBL	STREAMER	-	-
11	010	1978	780111	U		2-PETGUL	F	3	R		R WHT	STREAMER	-	-
12	011	1978	780111	U		SC5	M	3	R		LBL	SOLID	-	-
13	012	1986	851219	D	FY92	2-SU	M	7	R	151.399	YEL	SOLID	876	877
14	013	1987	860718	U		2-RGT	F	7	R	151.290	GRN	SOLID	871	872
15	014	1987	861214	U		2-RGT	M	1.5	R	151.410	BLK/YEL	ALT BLOCKS	875	873
16	015	1987	870123	U		5-SH	F	1.5	R	151.350	YEL	SOLID	882	883
17	016	1987	870123	U		5-SH	M	6.5	R	151.420	WHT/BLK	CTR STRIPE	890	891
18	017	1987	870131	U		5-SH	M	0.5	S		YEL/BLU	STREAMERS	874	879
19	018	1987	870217	U		1-MP365	F	5.5	R	151.320	RED	SOLID	873	976
20	019	1987	870217	R		2-RGT	M	0.5	S		RED/BLU	STREAMERS	892	893
21	020	1987	870218	R		2-RGT	F	0.5	R	151.330	WHT/BLK	ALTERNATE	977	978
22	020	1993	930203	D	7-93	RG8	F	6	S		BLU		0207	0207
23	021	1987	870218	U		2-RGT	F	0.5	S		YEL/RED	STREAMERS	979	980
24	022	1987	870301	U		5-SH	M	0.5	S		RED/WHT	STREAMERS	897	896
25	023	1987	870301	U		2-RGT	F	2.5	R	150.887	WHT/BLK	X's	985	986
26	024	1987	870311	U		5-SH	M	2.5	R	151.440	GRN	SOLID	989	990
27	025	1988	871214	U		1-MP365	F	0.5	R	151.535	BLK/WHT	DIAMONDS	117	118
28	026	1988	871217	U		2-RGT	M	0.5	S		WHT	STREAMERS	107	108
29	027	1988	880121	U		1-MP365	F	3.5	R	151.380	YEL/BLK	ARROWS	137	138
30	028	1988	880122	U		2-RGT	F	3.5	N		WHT/BLK	DOTS	---	---
31	029	1989	890107	U		3-RG5	F	0.5	N		RED/WHT	SLASHES	243	244
32	030	1988	SPRING	U			F		N		LBL/WHT	TRIANGLES	-	-
33	031	1990	900217	R		3-RGT	F	5	R	151.290	WHT/BLK	CHECKERBOARD	-	-
34	031	1993	930126	A		RG8	F	5.5	S/R	151.810	BLU	BLU/WHT GATES	0189	0189
35	032	1992	920122	A		2-RGT	F	3.5	R	150.830	WHT/BLK	X's	---	---
36	033	1992	920123	U		MP36.52	M	1.5	S		YELLOW		019	019
37	034	1992	920124	A		MP36.51	F	1.5	R	151.820	BLU/WHT	SQUARES	25	25
38	035	1992	920128	D	6-93	MP36.52	F		R	151.770	YEL/BLK	CENTER STRIPE	-	-
39	036	1992	920128	A		MP36.52	F	3.5	R	151.410	WHT/BLK	DOUBLE LINE	035	035
40	037	1992	920211	U		RGT-2	F	2.5	S		YELLOW		037	037
41	038	1992	920211	U		RGT-1	M	1.5	S		YELLOW		038	038
42	039	1992	920212	U		RGT-2	F	6	S		YELLOW		042	042

	NUMBER	TRAP YEAR	DATE	Status	RECOVERED	SITE	SEX	AGE	TYPE	FREQUENCY	COLOR	PATTERN	ET-L	ET-R
43	039	1993	930122	A		RGT2	F	7	S/R	150.800	BLU	BLU/WHT Y'S	0172	0172
44	040	1992	920212	U		RGT-1	F	2.5	S		YELLOW		043	043
45	041	1992	920213	U		RGT-1	F	.5	S		YELLOW		048	048
46	042	1992	920220	U		RGT-1	F	.5	S		YELLOW		057	057
47	043	1992	920220	U		RGT-1	F	5	S		YELLOW		058	058
48	044	1992	920221	D	930122	RGT-1	F	5	S		YELLOW		066	066
49	045	1992	920227	R		MP36.51	F	5	S		YELLOW		074	074
50	045	1993	930125	U		RG2	F	5.5	S		BLU		0186	0186
51	046	1992	920310	R		RGT-1	F	5.5	S		YELLOW		082	082
52	046	1993	930113	U		MP36	F		S		BLU		0138	0138
53	047	1992	920325	U		RGT-2	F	2.5	S		YELLOW		091	091
54	048	1992	920326	U		RGT-1	F	7.5	S		YELLOW		097	097
55	049	1993	930113	U		RGT1	F	2	S		BLU		0140	0140
56	050	1993	930113	D	7-93	RGT2	?	.5	S		BLU		0141	0141
57	051	1993	930120	U		RGT1	M	.5	S		BLU		0157	0157
58	052	1993	930120	U		RGT2	F	.5	S		BLU		0158	0158
59	053	1993	930123	A		RG8	F	4	S/R	151.891	BLU	BLU/WHT X'S	0176	0176
60	054	1993	930124	A		RGT1	F	4	S/R	151.940	BLU	BLU/WHT Z'S	0179	0179
61	055	1993	930202	U		MP36.5	F	4	S		BLU		0202	0202
62	056	193	930208	U		PG8	F	4	S		BLU		0242	0242





